

10/676,455

H0280

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A system that facilitates soft defect detection and analysis on a reticle, comprising:

- a scanning component that detects and images soft defects;
 - a milling component that excises material at soft defect locations; and
 - an analysis component that determines whether a signature is present in the chemical composition of a soft defect; and
- an excising component that removes the signature by transforming the signature into gaseous form and removing the gaseous signature with a pumping system.

2. (Original) The system of claim 1, the reticle comprising a pellicle.

3. (Original) The system of claim 1, the signature is indicative of the presence of at least one of sulfur, phosphorus, and an amino group.

4. (Original) The system of claim 1, the scanning component comprising at least one of a Scanning Electron Microscope and a Focused Ion Beam.

5. (Original) The system of claim 1, the milling component comprising a Focused Ion Beam.

6. (Original) The system of claim 5, the Focused Ion Beam comprising at least one of a single-beam Focused Ion Beam and a dual-beam Focused Ion Beam.

10/676,455

H0280

7. (Original) The system of claim 1, the analysis component comprising at least one of an Electron Microscope for Chemical Analysis and a Fourier Transform Infrared Spectroscope.

8. (Original) The system of claim 1, further comprising:
a processor operatively coupled to the scanning, milling, and analysis components for sending and receiving information to and from the components; and
a memory operatively coupled to the processor for storing information received and sent by the processor.

9. (Original) The system of claim 8, the memory comprising at least one of volatile and non-volatile memory.

10. (Original) The system of claim 8, further comprising a feedback loop between the processor and at least one of the scanning, milling, and analysis components that facilitates predicting soft defect growth with respect to time.

11. (Currently amended) A method that facilitates soft defect detection and analysis on a reticle, comprising:

~~Scanning scanning~~ and imaging soft defects;
~~Milling milling~~ detected soft defects to remove contaminants; and
~~Analyzing analyzing~~ detected soft defects to determine whether a signature is present in the chemical composition of the soft defects; and
treating the signature by converting the signature into gaseous form and removing the transformed signature.

12. (Original) The method of claim 11, the reticle is scanned in a non-pellicle region.

13. (Original) The method of claim 11, the signature is indicative of the presence of at least one of sulfur, phosphorus, and an amino group.

10/676,455H0280

14. (Original) The method of claim 11, the soft defect is scanned and imaged *via* employing at least one of a Scanning Electron Microscope and a Focused Ion Beam.

15. (Original) The method of claim 11, the soft defect is milled *via* employing a Focused Ion Beam.

16. (Original) The method of claim 11, the soft defect is analyzed *via* Electron Spectroscopy for Chemical Analysis if the soft defect is smaller than a predetermined size.

17. (Original) The method of claim 11, the soft defect is analyzed *via* Fourier Transform Infrared Spectroscopy if the soft defect is larger than a predetermined size.

18. (Original) The method of claim 11, further comprising making a determination as to whether a detected signature is detrimental to reticle performance.

19. (Original) The method of claim 11, further comprising employing closed-loop feedback to facilitate predicting soft defect growth with respect to time.

20. (Original) A method that facilitates treatment of a signature associated with a soft defect, comprising:

- employing a Focused Ion Beam in a non-reactive gas environment;
- effecting a phase shift in the signature to a gaseous state; and
- providing a continuous pump-out of the non-reactive gas environment to remove a signature in gaseous form.

21. (Currently amended) A system that facilitates soft defect detection and analysis on a reticle, comprising:

- means for scanning and imaging a soft defect;
- means for milling the soft defect; and

10/676,455H0280

means for analyzing the soft defect to determine whether a signature is present in the chemical composition of the soft defect; and

means for removing the signature by changing the signature into gaseous form and removing the gaseous signature.

22. (Currently amended) The system of claim 21, further comprising means to determine whether the signature is indicative of the presence of at least one of sulfur, phosphorus, and an amino group.

23. (Original) The system of claim 21, further comprising:

means for processing information related to the detection and analysis of a soft defect; and

means for storing information related to detection and analysis of a soft defect.

24. (Original) The system of claim 21, further comprising means for converting a signature to gaseous form for removal from the reticle.